

The Final Project

MEAT AND MASCULINITY: CHANGING CONSUMPTION OR CHANGING NORMS?

by

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Table of Contents

Title Page

Signature Page

Acknowledgments

Introduction

- I. Sustainability and Meat
 - A. The First Step - Industrial Agriculture
 - B. Water Water Everywhere, and Not a Drop to Drink
 - C. The Problem of Waste
 - D. Greenhouse Gasses
 - E. Less is More
- II. Decision Making
 - A. Biases & Heuristics
 - B. Motivated Reasoning and Cognitive Dissonance
 - C. Cultural Cognition
 - 1. The Cultural Grid Framework
 - 2. Trusted Sources
 - 3. Ingroups and Identity
- III. The Lens of Masculinity
 - A. Defining Masculinity
 - B. The Impact of Masculine Identity on Decision Making
 - C. Precarious Manhood
 - D. Performing Masculinity
 - E. Threats to Masculinity - Sustainability is Feminine
 - F. Meat and Masculinity
 - G. The Role of Cultural Cognition
 - H. Defending Meat: Impacts on Decision Making
 - I. Cognitive Dissonance of (not) Eating Meat
 - J. Conforming to Norms
- IV. Meat in Advertising
 - A. Meat & Masculinity - Then and Now
- V. Approaches to Changing Behavior
 - A. Trusted Sources
 - B. Framing
 - 1. The Evangelical Climate Scientist
 - C. Meat-less Messaging
- VI. Where Has This Worked Before?
- VII. Conclusion
- VIII. Bibliography

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At the start of the MLAS program, I had no idea where I would end up. After my first class, Communicating Science, it felt like I'd been pointed towards a yellow brick road. I followed it, hopeful that this path would lead me to discover how things work, why people do what they do, and how I could use that knowledge to create real change. But even as my degree neared its completion, and this final act became real—and imperative—I still didn't have all the answers. What I did have were guides, mentors, encouraging words, and helping hands.

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Introduction

Meat consumption has proven to be a significant contributor to climate change and environmental degradation. The first section of this paper, Sustainability and Meat, will offer an overview of the environmental issues stemming from the production of meat, which are emphasized in the special report on climate change by the Intergovernmental Panel on Climate Change (IPCC) and range from deforestation and loss of biodiversity to the release of greenhouse gases (Shukla, et al, 2019). As the global demand for meat grows, the unsustainable processes of producing meat place continuous strain on our environment. As a way to mitigate the environmental impact of meat production, the IPCC recommends that people consume less meat. In the United States, where meat consumption is high and culturally normative, this poses a challenge: how do you change behaviors so that people eat less meat?

The second section of this paper, titled Decision Making, will discuss the ways that people make decisions in light of new information. Presenting the objective facts of the environmental footprint of meat, while logical, is not enough to produce significant changes in cultural norms. Understanding how to motivate behavioral change offers valuable insights for reaching people who would otherwise reject change. There are a number of reasons why people do not change their behavior in light of objective scientific information. Among the possible reasons is “identity”, specifically “gender-identity”. Studies by leading researchers in the field of psychology, such as Dan Kahan, provide insight on the way people respond to information that is not aligned with their values and beliefs (Kahan, Jenkins-Smith & Braman, 2011).

This paper’s third section, The Lens of Masculinity, will consider a dominant form of traditional masculinity as a lens through which to examine how meat is linked to the values of a

masculine identity and the resulting impact on the decision to reduce consumption. The culturally dominant norms of masculinity in America place value on meat as a part of what is considered masculine. Many researchers have studied the specific link between meat consumption and socially dominant norms of masculinity in the U.S. A survey by the Office of Disease Prevention and Health Promotion found that men and teenage boys consume more meat than any other demographic (2015). Sustainable habits, such as a vegetarian diet, have been linked to feminine attributes (Swim, Gills, & Hamaty, 2020). Reducing meat consumption is often rejected as a threat to the standards and norms of masculinity. Viewed through the lens of advertising and popular media, these norms reaffirm the message that “meat is manly”, which is examined in the fourth section, titled Meat in Advertising, through examples found in past and current media (Sobal, 2005).

Approaches to Changing Behavior, the fifth section of this paper, discusses possible strategies for influencing behavior changes. While the norms of masculinity might not change, research provides suggestions for how meat reduction can fit into the cultural cognition that presently exists. The sixth section of the paper, titled Where Has This Worked Before?, will show how other industries have faced similar barriers posed by the social norms of masculinity. The personal care product industry, once culturally considered strictly a “feminine”, is an example of how something that was viewed as socially unacceptable for male-identified persons has been normalized in our current culture (Scheibling & Lafrance, 2019). Advertisements and market data also show a growth in recent trends towards gender-neutral products, indicating there is a continuous response and changing of cultural norms (Tungate, 2008). Examining the market for alternative meat products hints at a similar strategy and opens the door to assess how meatless diet choices can be normalized within the constructs of masculine identity.

Sustainability and Meat

The human diet has included meat since before the dawn of agriculture, and as humanity and culture evolved, so too did our diets (Gibbons, 2014). While not a requirement for the human diet, meat has become a staple in some cultures. Developed countries take the lead in meat consumption, with the United States as a major consumer (Shukla, et al, 2019). The U.S. Department of Agriculture (USDA) reported that the U.S. is the world's largest consumer of beef, with cattle production alone as one of the most lucrative U.S. agricultural industries, "accounting for \$66.2 billion in cash receipts in 2019" (2019). Meat consumption is also on the rise in the global south, as more people experience economic growth and increased access to meat (Delgado, 2003). Meat production has major impacts on many areas of the environment including; water, biodiversity, greenhouse gas emissions (GHG), and deforestation (Wellesley, Happer & Froggatt, 2015). The United National Sustainable Development Goals state the need to, "urgently reduce our ecological footprint by changing the way we produce and consume goods and resources" (United Nations, 2015). The unsustainable production of meat, and projected increases in consumption, require an exploration of how meat consumption can be reduced for a sustainable future (Henchion, 2014; Degaldo, 2003).

Sustainability encompasses many principles and characteristics. For the purpose of this paper, sustainability is interpreted as a measure of how human actions impact the continuous well-being of people and the environment (Keebler, 1988). Meat production, especially the practice of large-scale factory farming, is not considered sustainable, and the ecological footprint is broad (Santo & Raychel, 2015). The production of meat on a large scale is referred to as Industrial Farm Animal Production (IFAP), and the facilities where this production takes place or

known as Concentrated Animal Feeding Operations (CAFOs). The issues of sustainability and meat production must take into account several factors: the role of agriculture in producing animal feed, the use of pesticides and fertilizers, land requirements and loss of biodiversity, fuel costs and transportation associated with pre and post-slaughter, the substantial use and contamination of water resources, and the increase of GHGs that contribute to a changing climate (Hamerschlag & Venkat, 2011).

The First Step - Industrial Agriculture

The impacts of meat production begin before animals are even involved. To feed large quantities of animals, industrial agriculture is required. According to a study by the Environmental Working Group (EWG) (2011), half of all U.S. cropland is used to grow the grains that are used in animal feed. Agriculture on this scale is land-intensive, placing a heavy burden on ecological systems to support large scale crop growth. The IPCC Special Report on Climate Change and Land (2019) discusses the environmental impact of heavy systems-use, such as industrial farming and feed production, and how these processes have contributed to the destruction of ecosystems and crucial ecosystem services. For example, feed crops like corn or soybeans are often grown as monocultures—the practice of continuously planting the same crop in large areas— which reduces the biodiversity of the surrounding ecosystem and increases the need for pesticides and fertilizer use, often leading to soil depletion and habitat loss (Steinfeld et al., 2006). Globally, 70% of deforestation can be attributed to the clearing of land to grow animal feed (Stoll-Kleemann, Schmidt & Johanna, 2017). As more land is transformed into crops for feed, areas that serve as carbon storage—such as wetlands and forests—are lost, contributing to

an increase in GHGs and removing areas of significant carbon sequestration (Geist, Lambin, 2002).

Water Water Everywhere, and Not a Drop to Drink

Agriculture in the US. is a heavy user of freshwater, often straining already scarce water resources, especially in drought-prone areas where the use of underground aquifers are being depleted at an unsustainable rate (Horrigan, Lawrence, & Walker, 2002). In addition to water usage, water contamination is another issue associated with large-scale agriculture. Pesticides and fertilizers used to grow animal feed contaminate not only the air and surrounding wildlife but also find their way into water systems (Hamerschlag & Venkat, 2011; Pimentel et al., 1997).

The EWG reports 167 million pounds of pesticides and 17 billion pounds of fertilizer are used each year in the production of animal feed (Hamerschlag & Venkat, 2011). Pesticides and fertilizers can pollute both surface and ground waters, causing serious environmental impacts. One example is the creation of dead-zones from the run-off of nitrogen-heavy fertilizers, which then cause algal blooms. These algal blooms deplete the water of oxygen, creating areas where other water plants and fish cannot survive (Horrigan, Lawrence, & Walker, 2002). In a statement to the U.S. House of Representatives, Michael Cook, then Director of the EPA Office of Wastewater Management stated, “Agricultural runoff laden with chemicals (synthetic fertilizers and pesticides) and nutrients is suspected as a major culprit responsible for many “dead zones” in both inland and marine waters, affecting an estimated 173,000 miles of US waterways” (1998).

Water plays an important role in each step of the meat production process, and the impact of intensive water usage is not limited to the feed production phase. In his statement to the U.S. House of Representatives, Michael Cook also noted that the practice of industrial animal farming contributed to issues of water pollution in the U.S. (1998). Contamination from confined feedlots and their resulting waste can include pollutants such as heavy metals, antibiotics, and pathogens (Steinfeld et al., 2006). A study that looked at CAFO run-off contaminants found that commonly used livestock antibiotics can persist in surface waters and watersheds for long periods, accumulating in animal species up the food-chain (Song et al., 2007). These antibiotics can pose health risks to both humans and the ecosystems that are exposed to them. The source of this contamination is most often the animal waste produced by CAFOs.

The Problem of Waste

According to a report by The Pew Charitable Trusts and Johns Hopkins Bloomberg School of Public Health, dealing with animal waste is one of the major challenges with significant environmental repercussions for IFAPs (2008). The amount of waste produced is staggering; “A single housing 5,000 pigs produce the same volume of raw sewage as a town of 20,000, but the IFAP facility does not have a sewage treatment plant” (Walker, Rhubart-Berg, McKenzie, Kelling & Lawrence, 2005). The waste can include toxins in the form of pathogens and chemical contaminants, and U.S. regulations for this kind of waste do not have the same stringent standards as the regulations for human sewage (Trust & Hopkins, 2008). This waste is often untreated in large lagoons but is also sprayed on fields as fertilizer, contaminating not only the soil but also the air and water as a result (Song et al., 2007). Manure waste from livestock

production also emits a significant amount of methane, a GHG that contributes to climate change (Gerber et.al, 2013).

Greenhouse Gasses

Studies indicate that approximately 15% of anthropogenic GHG emissions come from the production of livestock, that's nearly equivalent to all of the fossil fuel emissions produced by the entire transportation sector (Hockstad & Hanel, 2018; Shukla, et al, 2019; Gerber et.al, 2013). Methane, nitrous oxide, and carbon dioxide are the three major GHGs that result from livestock production. Methane is 20 times more efficient at trapping heat than its counterpart, carbon dioxide, but stays present in the atmosphere for a shorter period of time. Animal waste is a major source of methane and carbon dioxide (and yes, to some extent, cow farts). Large ruminants, such as cows, are heavier methane and nitrous dioxide emitters because of their unique digestion (enteric fermentation) (Wellesley, Happer & Froggatt, 2015). According to the EWG, "Beef has more than twice the emissions of pork, nearly four times that of chicken and more than thirteen times that of vegetable proteins such as beans, lentils and tofu" (Hamerschlag & Venkat, 2011).

Nitrous oxide, which is 300 times more effective at trapping heat than carbon dioxide, is produced mainly by the "microbial degradation of manure" from waste lagoons (Hockstad & Hanel, 2018). Spraying manure as fertilizer is one of the ways the nitrous oxide is released into the atmosphere (Hamerschlag & Venkat, 2011). The transportation of animals, feed, fertilizers are a few additional sources of GHG emissions that are emitted as part of meat production (Hamerschlag & Venkat, 2011).

Less is More

The production and consumption of meat comes at a heavy environmental cost, one intensified by an upward trend in global meat consumption (Stoll-Kleemann, Schmidt & Johanna, 2017). Eliminating the consumption of animal products can shirk the average American's GHG footprint in half (Heller and Keoleian, 2014). The USDA reported that Americans consume, on average, around 216 pounds of meat annually (2020). Meat consumption is particularly prominent amongst people who identify as male (Rothgerber, 2013).

When presented with information on the environmental impact of meat, reducing or eliminating meat seems like a logical way to mitigate those impacts. For many people in the U.S., where meat consumption is high, this would require lifestyle changes (Stoll-Kleemann, Schmidt & Johanna, 2017). However, because human behavior does not invariably follow rational models; we do not always accept and agree with the expert scientific consensus. Facts alone do not necessarily determine how we make decisions. If information conflicts with the values and beliefs we already hold, that information is often rejected, refuted, or ignored (Kahan, 2011). In a culture where meat consumption is prevalent, and only 5% of American's identify as vegetarians (Hrynowski, 2019), information suggesting a behavior change could be met with resistance. Although the "cultural cognition" (Kahan & Braman, 2006) of eating meat presents itself in American values, it is apparent that without change, meat consumption will continue to be a contributing factor to enduring environmental degradation (Shukla, et al, 2019). The next section will explore reasons for why more Americans, especially men, are resistant to information about reducing meat consumption.

Decision Making

I know that most men...can very seldom discern even the simplest and most obvious truth if it be such as to oblige them to admit the falsity of conclusions they have formed, perhaps with much difficulty – conclusions of which they are proud, which they have taught to others, and on which they have built their lives. - Leo Tolstoy

Biases & Heuristics

The cognitive shortcuts that our brains develop to help with decision making offer possible explanations for how and why people make irrational or flawed decisions, also known as **bounded rationality** (Kahneman, 2003). There are many of these shortcuts, or heuristics, which help us interpret information and make quick decisions so that we can function efficiently in the world (Nisbett & Ross, 1980, Plous, 1993). It takes time and effort to process information, and so it makes evolutionary sense to develop shortcuts. There are potential downsides that can impact our responses and receptiveness to information, however. One of these occurs when we use those shortcuts to affirm the beliefs that we already have (Lord, Ross, & Lepper, 1979). While **heuristics** are the shortcuts that we take, **biases** are the stereotypes or preconceived ideas that help us to form quick judgments or assumptions. These heuristics and biases can lead to irrational decision making, especially when statistics and probability are involved (Tversky & Kahneman, 1974). While these mental shortcuts aren't necessarily negative (Gigerenzer, 2008), heuristics and biases can function as both tools and roadblocks for solving problems and making decisions (Haselton, Nettle & Murray, 2015).

Amos Tversky and Daniel Kahneman developed the concept of two systems of thinking that distinguished between intuition and reasoning (1974). Later, in his 2011 book *Thinking Fast and Slow*, Daniel Kahneman continued to develop and summarize their research on the cognitive processes for assessing information and making decisions. He introduced the concept of **System**

1 and System 2, two ways of thinking that our brain uses to process information. System 1 represents an automatic way of thinking, with little effort or control. This is the kind of thinking we use all day, every day, to make quick decisions. System 2 takes more effort and concentration, it is deliberate and can override System 1 when more in-depth processing is necessary (Kahneman, 2011). Working on a complex math problem, or preventing yourself from starting at something unusual are examples of System 2.

System 1 works efficiently in the realm of the familiar, and so those things that we encounter and normalize become simpler to navigate and understand, making our lives easier, but also prone to error and biases (Tversky & Kahneman, 1974). When considering things that are familiar, the **representative bias** is an example of how we might engage system 1 thinking to make a quick decision. An frequently used example asks us to consider a person based on a limited description and make a judgment on their profession:

An individual has been described by a neighbor as follows: “Steve is very shy and withdrawn, invariably helpful but with very little interest in people or in the world of reality. A meek and tidy soul, he has a need for order and structure, and a passion for detail.” Is Steve more likely to be a librarian or a farmer? (Tversky & Kahneman, 1974). When people choose the librarian option, they do not take into consideration that there are statistically more farmers than librarians. Even in similar experiments where people were given statistics showing that more people occupy one career over the other, the results were the same - judgments were made based on the descriptions given (Tversky & Kahneman, 1974).

Another example of one of the “shortcuts” that can lead to errors in decision making is the **availability heuristic** (Tversky, & Kahneman, 1974). The availability heuristic is when we

believe something is more prevalent or common than it truly is because of how easily it comes to mind (Worth, 2017). For example, if there is an airplane crash that is heavily covered by the news, a person might believe that the likelihood of being in an airplane accident is higher than it actually is because of how easily the recent news report comes to mind. Or, if someone only has friends who are dog owners, they might think that dog ownership is more prevalent than cat ownership because that is what they are exposed to most often. Being biased towards the availability of information, how quickly we can bring something to mind, is one example of how our patterns of thinking can lead to errors and inefficiencies (Worth, 2017).

We've seen how our patterns of thinking are influenced by the information we're exposed to, shaping our assumptions and choices. The commonly accepted beliefs and opinions that we maintain can impact how people perceive and respond to new information—by accepting it or viewing it critically. Often, people seek to confirm what they already know, which is easier than challenging patterns of thinking (Kahneman, 2011). This **confirmation bias** can lead to defensiveness or outright rejection of new information in order to continue to confirm what is familiar, known as **biased assimilation** (Lord, Ross, & Lepper, 1979). A Stanford study by Charles Lord, Lee Ross, and Mark Lepper examined this phenomenon with 48 undergraduate students, half in support and half in opposition to the death penalty. Researchers showed them studies that either supported or opposed the death penalty's "deterrent efficacy". They found that the students were more likely to find the studies that supported their original opinion on the issue to be more valid, and even focused on portions of the opposing studies that seemed to support their opinion, or found "flaws" within the study. Additionally, researchers found that the attitude of students towards their original belief about the death penalty were ever more entrenched afterward, not influenced towards the opposing evidence (Lord, Ross, & Lepper, 1979). Here we

see more than just confirmation of existing beliefs, we see defensiveness and biases engaging to support beliefs that are being challenged. Important to note is the defensive biases' tendency to entrench people in their own beliefs, making polarizing issues even more divergent (Lord, Ross, & Lepper, 1979). These responses dampen the acceptance of new information and filter it through pre-existing beliefs (Risen et al., 2007). Even more challenging—people don't think they are being biased, and even think others with different views are more biased in their opinions (Ehrlinger, Gilovich, & Ross, 2005). Kahneman writes, "Democracy is inevitably messy, in part because the availability and affect heuristics that guide citizens' beliefs and attitudes are inevitably biased, even if they generally point in the right direction" (Kahneman, 2011).

Motivated Reasoning and Cognitive Dissonance

Another explanation for why people resist new information is due to our emotional response to discomfort at having conflicting thoughts or behaviors. This emotional reaction can make us resist or try to minimize information that conflicts with what we already believe. In 1957, Leon Festinger published *A Theory of Cognitive Dissonance*, which was foundational in understanding the discomfort that comes from being exposed to information that challenges or contradicts one's beliefs (Harmon-Jones, 2019). Cognitions (thoughts, beliefs, or perceptions) can be consistent with each other or can conflict with each other or a person's actions. People strive for consistency and feel discomfort when holding conflicting cognitions and behaviors. The triggering of negative emotions or discomfort due to the conflict between beliefs and actions is referred to as dissonance (Harmon-Jones & Levy, 2015). For example, a smoker who is faced with the knowledge that smoking is bad for them would try to block or reject the information

making them experience discomfort—**cognitive dissonance**. They might say that someone in their family smoked for years without any health issues, thus adding a consonant thought to reduce dissonance. They might say that they workout a lot, so having a cigarette now and then isn't really all that bad. They might reject the information that's causing the feelings of dissonance by saying something like, "those studies were overblown, they weren't accurate". The motivation to be consistent in their thoughts and beliefs means that people will find a way to resolve that inconsistency (Festinger, 1957).

In order to harmonize their conflicting beliefs and actions, people use different strategies and defense mechanisms to respond to conflicting information. Without actually changing their behavior, people rely on cognitive strategies to bring their beliefs into alignment (Harmon-Jones, 2019). Of course, the most straightforward way to mitigate dissonance would be to change behaviors, but as Eddie Harmon-Jones discusses in his book *Cognitive Dissonance: Re-examining a Pivotal Theory in Psychology* (2019), there are a number of cognitive mechanisms people use to reduce dissonance rather than changing behavior. One of these is to trivialize or modify conflicting information to reduce the discomfort caused by cognitive dissonance. Adding "consonant" cognitions is another way of bringing harmony to dissonant thoughts. For example, a person might reduce their dissonance surrounding eating junk food by saying "I worked out a lot today, so it's ok that I'm eating this". Denying dissonant information is another method that eliminates the discomfort by determining that it is not correct, such as claiming "That's fake news. There's no real evidence to support that".

A study Hannah Nam, John Jost, and Jay Van Bavel explored how people's political ideology influenced their reaction to situations that provoke cognitive dissonance and found that

people tend to avoid information that might cause dissonance more often when that information is closely tied to personal values and beliefs. Participants were asked to participate in “dissonance-arousing tasks” which included writing arguments in favor of highly politicized topics that were in opposition to their own beliefs. Researchers found that the strongest held political ideologies created the strongest dissonance avoiding behavior. For example, respondents were less likely to agree to write a counter-attitudinal political essay, than a counter-attitudinal essay about MACs vs PCs (Nam, Jost, & Van Bavel, 2013). This is in line with prior research which indicates that the more personal the beliefs or values that a person holds, (highly politicized or religious topics for example), the more resistant people are to information that conflicts with those beliefs and values (Braman, Kahan, & Grimmerman, 2005). The rejection of information that is not in alignment with one’s beliefs is a deterrent to accepting fact-supported data, an issue that climate change scientists are acutely aware of (Kahan et al., 2012). Another study by Dan Kahan, Ellen Peters, Maggie Wittlin, Paul Slovic, Lisa Larrimore Ouellette, Donald Braman, and Gregory Mandel looked at US adults’ risk perceptions of climate change using two theories. One was the science comprehension thesis, which assumes that people are more or less concerned about climate change based on their understanding of the complexities of climate science. The other, **cultural cognition theory**, posits that people’s level of risk perception towards climate change is formed by the “societal risks that cohere with values characteristic of groups with which they identify” (Kahan et al., 2012, pg 732). The study found that better communication of science did not change how people viewed climate change risks. Rather, the beliefs and values or the cultural groups that they were a part of were more likely to determine how they understood the risks of climate change (Kahan et al., 2012). Kahan’s findings suggest that neither an information deficit, nor the role of biases and heuristics, are the

driving reason for resisting information. Rather, the problem is resisting information that conflicts with one's identification of a particular group (gender, political, religious, etc), known as “cultural cognition”.

Cultural Cognition

“One of the great commandments of science is, "Mistrust arguments from authority." - Carl Sagan

One potential explanation for why people don't change their behavior in light of new information is the theory of cultural cognition. **Cultural cognition** is defined as the tendency of people to base their acceptance (or rejection) of objective facts on what aligns with their cultural values and commitments (Kahan & Braman, 2006). The idea that “culture is prior to facts in individual cognition” (pg. 150) is central to the theme of cultural cognition theory—that the influence of cultural values comes before a rational acceptance of facts, especially when controversial policies or social issues are concerned (Braman, Kahan, & Grimmerman, 2005). People form beliefs based on their cultural or group values, the “norms” of the social members they are a part of, and that becomes a major part of how people make decisions and form beliefs (Kahan & Braman, 2006).

Studies on topics of significant political and cultural import have demonstrated the influence of cultural cognition as a basis for how people form—and conform to—opinions, beliefs, and risk perception. It's just not possible to be an expert on all of the topics that impact society, politics, or science, (to name a few), so people form their beliefs on the opinions and values of the groups that they are a part of. In many ways, the foundation of our core beliefs are

shaped by our group memberships. Our group memberships impact how we respond to information that either confirms or threatens our values, and the values of our ingroups (Cohen, Aronson, & Steele, 2000).

Cultural Cognition: Worldview - The Cultural Grid Framework

There are many groups that people can belong to that form their values and beliefs. One group type that an individual can belong to is based on their worldview. Many researchers use a basic, but straightforward “cultural grid” framework to help organize and understand cultural worldviews (Douglas, 1994; Thompson, Ellis, & Wildavsky, 1990; Gastil, Braman, Kahan, & Slovic, 2011). The grid is designed to help measure how people interact with the world by categorizing what types of social or political ideals structure the values and beliefs of different groups of people. This framework organizes people as “egalitarian” or “hierarchical” on one axis and “communitarian” or “individualistic” on the other. For example, someone with a “hierarchical” worldview would value a rule-based system with obedience to standards and laws, respect for authority, tradition, and distribution of rewards based on clearly defined characteristics. An “egalitarian” worldview is one that relies less on rules, rather places value on the equal distribution of goods and services. This worldview is willing to compromise for the greater good. On the other axis, people’s worldviews are categorized as “communitarian” or “individualist”. People who can be described as “communitarian” value the responsibility of society as a whole to support success for the group rather than the individual, whereas someone with an “individualistic” worldview values freedom and the right for individuals to secure their own success without interference (Kahan & Braman, 2006; Chuang, Manley, & Petersen, 2020).

This framework has been frequently used to find patterns and consistencies across cultural cognition studies and explain how people's values impact their acceptance of facts, risk perception, and decision making (Gastil, Braman, Kahan, & Slovic, 2011). Some of the issues of significance that are impacted by culture and moral values, rather than objective facts, include hot topics of political and moral value such as gun regulation, vaccinations, GMOs, and nuclear energy. Our desire to belong to particular groups influences the way that we privilege certain facts over others, and it can also lead us to elevate certain individuals who strongly represent the values of our ingroup. Those individuals come to represent sources of trustworthy information within ingroups, whether that information is factual or not.

Cultural Cognition: Trusted sources

Human behavior is not always rational; we do not always accept and agree with the expert scientific consensus (Kahan, 2011). Facts alone do not determine how we make our decisions. If information conflicts with our values and beliefs, it is often rejected, refuted, or ignored (Kahan, 2011). As a part of cultural cognition theory, **source credibility heuristic** plays an important role in people's acceptance of information, as we cannot be experts on all topics, and therefore rely on various sources to provide us with the layout for how we base our opinions. If information comes from a trusted source, a person or group that shares the same values as us, it is more likely to be accepted (Madsen, & Farrow, 2019). People will often seek out information from trusted sources, relying more heavily on that source rather than the objective facts, which can be limiting (Kahan & Braman, 2006).

For example, a study by Dan Kahan, Donald Braman, Geoffrey Cohen, John Gastil, and Paul Slovic (2010) tested the cultural cognition thesis by looking at people's responses and risk

perception to the idea of adopting a mandatory human-papillomavirus (HPV) vaccination for school-aged girls. The study assessed a sample of over 1,500 adult Americans both in favor of and opposed to a mandatory HPV vaccine requirement. This study tested not only to determine if cultural worldviews were a factor in opinion but also how certain aspects of cultural cognition were demonstrated in light of objective facts. The study found that cultural values did in fact shape people's risk perception of a mandatory vaccine. Researchers found that biased assimilation of information inclined participants to evaluate evidence through the lens of their prior beliefs and cultural understanding. Researchers observed the participant's source credibility heuristic, which inclined them to evaluate information as more or less trustworthy based on their prior opinions of the source of the information. Ultimately, cultural values influenced how participants viewed both the credibility of evidence and the source of that evidence (Kahan, Braman, Cohen, Gastil, J., & Slovic, 2010).

Cultural Cognition: Ingroups and Identity

Ingroups are a way that people relate to others, and themselves. People are often part of multiple ingroups, forming a complex collection of identifiers that pattern a foundation for identity, cultures, and ultimately impacts our value and beliefs (Robbins, 2005). Religion, political affiliations, gender-identity, or education level are a few examples of ingroups that people might identify with. Social identity theory (Tajfel & Turner, 1979) states that people have preferential treatment towards others within their ingroup and develop biases to outside groups or threats toward their identity as part of a group. Similarly, gaining and keeping the acceptance of others is an important part of human social interactions, which motivates us to stay aligned with our group's values. Leading researcher Dan Kahan put a fine point on it when he

noted that cultural cognition is “conforming of beliefs to the ones that predominate within one’s group” (Kahan et al., 2012, pg. 733).

In striving to remain aligned with the values of our groups, we develop biases and heuristics that help us to keep our cognitions consistent and accessible to what we identify with (Rogers, 1959). In this way, we develop a sense of identity. We place much value on the intangible aspects of self-identity, receiving social validation from sharing things like beliefs and opinions with other members of our groups (Kahan et al., 2012). A three-part study that investigated defensive biases and social validation found that when people feel liked for their “intrinsic value”, as opposed to being liked for actions or achievements, they exhibit fewer defensive biases and are more accepting of new information (Schimel, Arndt, Pyszczynski, & Greenberg, 2001). Researchers also found that perceived threats to the intrinsic aspects of self—“who one thinks one really is”—can trigger defensive cognitive responses (Schimel, Pyszczynski, & Greenberg, 2001). Acting per the values of your group generates social validation, acceptance, and affirmation that one’s identity and beliefs are supported, accepted, and in accordance with those who share the same important values. We strive for this accord, this harmony, within our social groups, and respond defensively to information that is incompatible with that harmony. This powerful force filters how we respond to even the most objective facts (Kahan, Jenkins-Smith & Braman, 2011).

A study by Dan Kahan, Donald Braman, John Gastil, and Paul Slovic that looked at opinions on the topic of gun control found that cultural worldviews were indicative of opinions on gun control policy, even more so than conventional political identifiers (conservative/liberal). 1,572 US adults were surveyed online and asked to rate their support of certain proposed policies and laws (2011). The study used the cultural grid model, (previously described above), to

observe how cultural differences presented differing values related to gun control, finding that, “egalitarian collectivists (*communitarians*) support stricter gun control at a rate between 42 and 43 points higher than do hierarchical individualists” (pg. 712). Knowledge of government policy did not significantly impact opinion, but cultural orientation had the biggest effect on people’s view of gun control policy. The researchers of this made an important distinction, that cultural orientation and political labels are not the same, and conflating the two misses the important role that culture (not ideology) plays in shaping public opinion on political topics (Gastil, Braman, Kahan, & Slovic, 2011). As noted previously, there are numerous groups with which people can identify and form value and beliefs. The next section will consider one cultural group identity—socially constructed masculinity—and how it influences behavior, particularly the resistance to eating less meat.

The Lens of Masculinity

*What are little boys made of?
Snips and snails,
And puppy dog tails,
That’s what little boys are made of.
What are little girls made of?
Sugar and spice,
And everything nice,
That’s what little girls are made of.*

-Nursery Rhyme

Defining Masculinity

When talking about the expression of masculinity seen in today’s American society, it is important to not to caricature or pigeonhole men and masculinity as a whole. The study of gender identity and expression is too complex for it to be properly explored in one paper (or one

book, or one lifetime!). In fact, limiting the discussion of gender expression to two categories, masculine and feminine, is already an oversimplification of the human experience. While there is truly a colorful spectrum of genders and gender expression to explore (Moore, 1994), this paper will limit its exploration to culturally dominant traits of masculinity, not as biological sex, but rather as a socialized norm of expressing and describing male gender roles (Levant & Richmond, 2008; Baum & Westheimer, 2015).

There is a plethora of research that points to the significant impact culture has on our gendered behaviors and identities (Grilpin & Proulx, 2018). Socially constructed gender expressions are based on behaviors that western society deems to be, narrowly, feminine, or masculine. Assigned and reinforced from the time we're children, these roles begin when we're given either a doll or a toy hammer, a blue shirt, or a pink dress—manifesting in a lifetime of expectations and norms (Baum & Westheimer, 2015). Those expectations can be especially powerful for boys who are taught that not sticking with traditional norms (e.g., tough it out, don't be a sissy) will have negative consequences (Reigeluth & Addis, 2016).

The American Psychological Association (APA) describes the traditional and hegemonic norms of masculinity in American culture with words like: competitive, aggressive, stoic, and dominant (APA, 2018). After announcing a new set of guidelines for psychologists working with men and boys, the APA tweeted, “Traits of so-called ‘traditional masculinity,’ like suppressing emotions & masking distress, often start early in life & have been linked to less willingness by boys & men to seek help, more risk-taking & aggression” (APA, 2019). The narrow set of characteristics that provide a framework for a culturally dominant version of idealized masculinity include, but are not limited to: power, achievement, strength, invulnerability, independence, dominance and power over women, virility, and concealing emotions (APA,

2018; Springer & Mouzon, 2011; Nath, 2011; Adams, 2015; Emslie, Ridge, Ziebland & Hunt, 2006; Connell & Messerschmidt, 2005).

The Impact of Masculine Identity on Decision Making

The pressure to adhere and conform to beliefs about traditional masculine norms can impact people's behavior and decision making. Studies in health-related behavior have clearly demonstrated this trend (Courtenay, 2000). One study surveyed cisgender men to determine if their views on masculinity impacted whether or not they would seek preventive healthcare, such as a flu shot or prostate exam (Springer & Mouzon, 2011). Cisgender refers to people whose sex assigned at birth is the same as their gender identity (VandenBos, 2007). The researchers hypothesized that men with more strongly held beliefs about masculinity would be less likely to seek preventative care by asking questions related to hegemonic masculine ideals such as success, toughness, independence, and concealing emotions. The results of the study were consistent with their hypothesis: men with the strongest held beliefs about masculinity were half as likely as men with more moderate beliefs to seek preventative care. Another study looked at how exaggerated views of masculinity impacts psychological health (Yousaf, Popat & Hunter, 2015). Researchers examined a diverse group of cis-men and found that those who held traditional views of masculinity had significantly higher negative beliefs about seeking mental help services than respondents with more open views of gender identity norms. The study also found that in-person vs online respondents showed more amplified ideas about how men should behave (stoic, emotionless) suggesting a social aspect of masculine identity behavior (Yousaf, Popat & Hunter, 2015). Personal health-related choices are one example of an area where researchers have explored how the norms of traditional masculinity can impact choices and

decisions, but there are many other examples of the impacts that masculine identity can have on decision making (Eagly, Wood & Diekmann, 2000).

Precarious Manhood

There is no one definition of masculinity, and the characteristics that describe a cultural version of idealized masculinity vary among different social groups. Still, an idealized masculine identity norm is often associated with a narrow set of characteristics such as power, achievement, strength, and invulnerability form a framework for understanding behaviors associated with (Connell & Messerschmidt, 2005). In a series of studies done by Vandello and Bosson (2013), masculinity or manhood, is hypothesized to be “precarious” or elusive, a thing that must be continuously proven, and is easily lost. Regardless of the defining actions and standards that change over time, the foundation of precarious manhood is the idea that it is not awarded at birth, instead, it is earned, and therefore can be lost. The need to continuously prove masculinity drives behaviors and anxieties.

A significant part of those behaviors and anxieties is centered around avoiding being viewed as feminine (Vandello & Bosson, 2013). One of the studies asked cis-men and women entering the workforce to answer questions about flex-work schedules. By pre-COVID-19 standards, choosing to spend more time working from home was viewed as feminine by male respondents, associated with maternity leave and childcare. Even though the study found that men and women both highly valued the option to work from home, men responded that they were less likely to actually take the opportunity, and they worried that their masculine gender status would be in jeopardy— afraid of being seen in a feminine light because they chose to work from home. The study notes that “one consequence of avoiding femininity is that it can

reduce men's pursuit of experiences that might otherwise benefit them" (Vandello & Bosson, 2013).

Avoiding things that are considered feminine requires that activities or behaviors be gendered. Food is an example of something that is gendered in a variety of ways, from the roles of preparation to the types of food that are consumed (Newcombe, McCarthy, Cronin & McCarthy, 2012). American food culture also includes stereotypes, such as the "Red Blooded American", which might bring to mind images of a steak-eating, burger-grilling man. How easy was it to conjure up a mental picture? Gendering certain behaviors as masculine or feminine is made blatantly clear in advertisements, pop culture, repeatedly reinforcing norms and beliefs (Rothgerber, 2013; Adams, 2015).

Performing Masculinity

As a cultural expression of belonging to a group, masculinity is performative, signaled through actions, or inaction, regarding the norms that determine what is acceptable (Brownlie & Hewer, 2007). A 2007 study by James Mahalik, Shaun Burns, and Matthew Syzdek surveyed 147 men between the ages of 18-78 to assess their perceptions of masculine social norms and used that information to predict health-related behaviors, such as seatbelt use, tobacco use, physical fighting, and dietary habits (2007). They used a "94-item questionnaire that assesses conformity to an array of dominant cultural norms of masculinity in the United States" (pg 5) and predicted that conformity to masculine norms would be a predictor of health-related behavior. If men considered something to fall under the umbrella of masculine norms, they would also consider the same behavior as normal for themselves. The researchers confirmed this hypothesis, finding that those who identified more strongly with traditional masculine norms

tended to behave in line with the social norms of other men, even when there were associated health risks (e.g., eating a triple patty cheeseburger, engaging in a bar fight, consuming a higher number of alcoholic beverages). In addition, the study found that the men surveyed also indicated opposition to behavior that was different from the norm, such as rejecting eating vegetables in favor of a burger. This suggested to researchers that social signaling—actions to communicate that they belong in the group—also plays a role in choices about things like diet (Mahalik, Burns & Syzdek, 2007).

Threats to Masculinity - Sustainability is Feminine

Research indicates that people develop opinions on social issues in part because of the stereotypes associated with the type of people, especially activists, who support those issues, rather than their personal beliefs about the issues (Bashir, Lockwood, Chasteen, Nadolny & Noyes, 2013). Issues concerning sustainability are often gendered, with climate activism being associated with women and femininity (Brough et al, 2016, Zelezny, Chua,& Aldrich, 2000, Swim & Geiger, 2018).

Global Warming's Six Americas, a study by Leiserowitz, Maibach, Roser-Renouf, and Smith (2011), developed a six-category scale of the American public's "belief" in global warming, and offered insights into effective communication strategies for sharing climate data. The categories range from Alarmed— people who are most concerned about climate change—to Dismissive—people who do not believe climate change is real and are against any policies that would call for climate action. Making use of these findings, Swim & Geiger (2018) examined the gendered stereotypes of climate change beliefs based on the scale originally created in the Global Warming's Six Americas. Swim and Geiger found that the groups that showed more concern

over climate change (cautious, concerned, alarmed) were perceived as having feminine traits. Making use of these findings, a follow-up study by Swim, Gills, and Hamaty (2020) looked at how the gendered nature of people's impressions of climate change issues encouraged or discouraged activism. The researchers found that when the public issue was perceived as possessing positive masculine traits (braveness, boldness), there was higher engagement with that issue. When the positive masculine traits were specifically associated with being dismissive of climate action, men were not only less interested in climate activism but were also more likely to support anti-climate activism. In the first study, Swim and Geiger noted that adherence to traits that are perceived as positive by masculine social groups influence interest in topics of public concern, "Masculine traits reflect agency and the present results are consistent with the notion that impressions derived from status and power associated with the group influence interest in engaging in behaviors consistent with a group's position" (2018). The same results were not found to be true for women, which researchers hypothesized to indicate that the impact of gender identity threats are less pressing for people who identify as women (Geiger & Swim, 2018).

Meat and Masculinity

Gendered climate activism stereotypes also extend to sustainable consumption habits, such as eating a vegetarian diet (Swim, Gills, & Hamaty, 2020). In the culture of a deeply rooted masculine identity, reinforced by social dynamics, there is a stigma on behavior that is not consistent, or that conflicts, with socially accepted ideas of masculinity (Swim, Gills, & Hamaty, 2020). The association between masculinity and eating meat is so close that meat has become metaphorically "male" (Sobal, 2005; Rozin, Hormes, Faith, & Wansink, 2012). U.S. National

Health and Nutrition Examination Survey found that men and teenage boys consume more meat than any other demographic (Office of Disease Prevention and Health Promotion, 2015). Meat eaters are perceived as more masculine, and vegetarians are often associated with feminine attributes (Rothgerber, 2013; Ruby & Heine, 2011). This is in sync with a stereotype that eating meat is manly, part of an image of strength, dominance, vitality, and is deeply rooted in the culture of masculinity that places value on, and associates meat with, those traits (Nath, 2011). “In fact, being a meat eater was explicitly identified as one of the attributes of an ideal man, primarily through increased muscle strength” (Rothgerber, 2013). The gendering of foods is a way of expressing identity through choices, with meat, and red meat especially, being a typical masculine food, and the need for it often exaggerated (Sobal, 2005). Studies also find this trend is played out in the amounts of meat that people eat, with male-identifying persons consuming more meat, especially red meat, than people who identify as women (Gossard, 2003).

In her book *The Sexual Politics of Meat* (2015), Carol Adams described a culture in which dominance and power over women is a mirror for the same masculine sentiment of consuming animal flesh. Adams delves into the history of meat consumption, demonstrating repeatedly how American culture, specifically, has created almost a reverence and sense of righteousness around men’s consumption of meat. In one example, Adams writes about the rationing of meat during World War II so that soldiers would have more meat, associating eating meat with strength—an equivalency that spills over into various versions of idealized masculinity, such as the soldier, the athlete, the working man.

“In some respects we all acknowledge the sexual politics of meat. When we think that men, especially male athletes, need meat, or when wives report that they could give up meat but they fix it for their husbands, the overt association between meat eating and

virile maleness is enacted. It is the covert associations that are more elusive to pinpoint as they are so deeply embedded within our culture. My.” (Adams, 2015)

Research into how people use food choices to represent themselves in their group relationships found that food is one way that, men specifically, use to express who they are to others (Newcombe, McCarthy, Cronin & McCarthy, 2012), “The gendering of foods serves as a mechanism in buttressing the presence of hegemonic masculinity” (pg 392). Meat is not just a food group, but also is a way of expressing masculine identities, with meat as the embodiment of a masculine expression (Connell & Messerschmidt, 2005)

Picture a barbecue, or the carving of a Thanksgiving turkey, places where masculinity is demonstrated through social meat consumption. Rejecting meat would risk rejecting what is considered, in many ways, part of what our culture defines as “being a man” (Nath, 2011). A study of vegetarian men reported that respondents expressed frequent discomfort at having to defend their masculinity because of their choice to stray from a meat-eating norm, and even became used to ridicule and criticism from friends and family members (Nath, 2011). In her book, Adams expresses this by writing, “Men who become vegetarians challenge an essential part of the masculine role. They are opting for women’s food. How dare they?” (pg 138). When meat is a metaphor for manhood, the cultural cognition of meat consumption may influence how food choices are made (Rozin et.al, 2012).

The Role of Cultural Cognition

There are many ways that we establish our identity, one way being through our membership in social circles, communities, and group affiliations like religion, nationality, or political identity. Social memberships help form and confirm our identity, impacting how we

respond and react to things that contrast with the values and beliefs of our “ingroup” (those with whom share the same values and beliefs) (Kahan, Braman, Gastil, Slovic & Mertz, 2007).

Hegemonic masculinity, as a part of a cultural identity, requires adherence to the norms of what is considered masculine (Courtenay, 2000). But as noted previously, our values and actions don’t always align. When people do not feel in alignment with the values and beliefs of their in-group, cognitive dissonance comes into play (Sherman & Cohen, 2002). This discomfort, the feeling of being disjointed from what is central to your identity, can be alleviated by maintaining consistency with the norm (Matz & Wood, 2005). The dissonance experienced by a misalignment centered around gender identity, or not being “manly enough”, is especially potent when the culture of the social group in question is dominant, powerful, but precarious (Buck, Plant, Ratcliff, Zielaskowski & Boerner, 2013).

Despite a changing food landscape and dietary trends towards organic and healthy eating, there is still a general stigma attached to vegan and vegetarian diets (Markowski, 2019). The stigma against men is especially notable, with research finding that vegetarians are viewed as less masculine (Ruby & Heine, 2011). Add to that a “feminized” stereotype of sustainable consumption habits (Brough, 2016) and conflict arises for someone trying to uphold a hegemonic masculine gender identity that fits the norms of others who share their values and beliefs, while being confronted with information about the environmental impact of eating meat (Brough, 2016). Choosing not to eat meat as an act of sustainability would run the risk of being seen as feminine, going against the norm for hegemonic gender identity. Consider two things: the gendered stereotypes of a vegetarian diet (Nath, 2011), and the social consequences of engaging in a gendered activity that conflicts with a masculine identity (Ruby & Heine, 2011). With something as public and communal as eating, people are more likely to make choices based on

how they want to be identified – signally to their in-group that they have the same values and attitudes, rather than being seen as different, or someone who is excluded from their in-group (Eagly, Wood & Diekmann, 2000). When meat is manly, not eating meat is a signal that you're not "part of the group".

Defending Meat: Impacts on Decision Making

When it comes to meat and the threat of being misidentified, people who subscribe to a culturally defined form of masculinity are willing to make the choice that keeps them on track with the norms of the group (Mahalik, Burns & Syzdek, 2007). For example, if someone wanted to eat the vegetarian option, they might bypass their preference, instead choose the meal with meat in order to avoid being associated with the vegetarian, and feminine identified choice. The stigma and fear of being misidentified influences the decisions a person makes (Matz & Wood, 2005). "Eating a stereotypically masculine (but artery-clogging) steak may carry greater physical health risks than opting for the arugula salad, but eating the salad may carry social risks to manhood status" (Vandello & Bosson, 2013).

A study by Robb Willer, Christabel Rogalin, Bridget Conlo, and Michael Wojnowicz (2013), researched how people make choices based on threats to a culturally dominant form of masculinity. They described it as, "a narrowly defined, hegemonic masculinity including competitiveness, assertiveness, physical strength, aggression, risk-taking, courage, heterosexuality, and lack of feminine traits" (pg 983). They hypothesized that when threatened, this identity would be overcompensated for—what they called the **masculine overcompensation thesis**. Willer et al conducted a series of experiments that surveyed a random selection of cis

men and women and found that men who were given a made-up gender identity survey and were told that they scored higher “feminine” results (enter the gender identity threat) were significantly more likely to support war, belief in male-dominance and homophobic views. Women, and men who did not receive gender-threatening results, did not show any significant changes in their opinions (Willer, Rogalin, Conlon & Wojnowicz, 2013). When masculinity is threatened, men defend their identity by acting in a way or espousing beliefs that align with the masculine norms. This could look something like ordering a burger after being ridiculed for considering the salad option at a restaurant.

Cognitive Dissonance of (not) Eating Meat

But what happens when a person's concern for the environmental impact of consuming meat comes into conflict with cultural ideas of masculinity? When meat consumption is intertwined with masculine norms, conflict of values and actions can lead to cognitive dissonance (Onwezen, & van der Weele, 2016). A study by researchers in Australia explored the cognitive dissonance around meat and gender. Researchers found that men experience cognitive dissonance differently from women when presented with facts about eating meat (the “meat paradox” - the conflict between people’s desire to eat meat and their concern for animal welfare). Researchers found that men experience cognitive dissonance differently from women when presented with facts about eating meat, and in fact will often defensively consume more meat (Dowsett, Bray, Ankeny & Chur-Hansen, 2018). Many people who care about animal welfare still eat a meat central diet which results in dissonance (Herzog, 2010). The study found that some people alleviated this dissonance by describing the animals that they eat as less capable of feeling pain or suffering, and less “worthy of moral concern” (Loughnan, Bastian, & Haslam,

2014). This demonstrates how someone might modify their beliefs to better fit their cognitions. By believing that the animals that one eats are somehow less likely to feel suffering, the discomfort caused by feeling bad about eating those animals is reduced.

Conforming to Norms

Popular culture and advertising affirm the normalcy of the meat/masculinity connection, (Stibbe, 2004). If you only looked at how products are advertised, it would appear that American culture continues to glamorize an image of idealized masculinity that endorses eating meat as a defining feature. Imagery in advertising perpetuates cultural stereotypes of masculinity that promote the idealized meat-eating man. In an analysis by Arran Stibbe (2004) of a popular men's magazine, Men's Health, over a six month period, Stibbe found that eating meat, with a highlight on red meat, was directly tied to idealized images of masculinity.

This is not to say there aren't intricacies and variations of masculinity that do not fit the dominant stereotypes of masculinity that persist in our culture; instead, the important thing to examine is the way that eating meat has become an expression of identifying with aspects of socially constructed masculinity (Newcombe, McCarthy, Cronin, & McCarthy, 2012). Not only can meat consumption be a part of identity, but it can also be a way of expressing identity and sending the signal to others that you fit a definition of masculinity is acceptable in the social circle you're a part of (Rothgerber, 2013). Observing how masculinity is portrayed in advertising offers a glimpse at how advertisements can be an expression of identity. ✓

Meat in Advertising

“In a time where the gender binary and gender roles have been questioned and debunked, it’s hard to put a finger on what masculinity actually is—and why meat has any role in it.” - [Pop Science](#)

Meat & masculinity - Then and Now

The portrayal of meat as a masculine product is not a new phenomenon. In the same vein as Adams’ writing on men and meat during wartime—linking meat with strength, fighting, and even survival—Katherine Parkin’s book *Food is love: Food advertising and gender roles in modern America* (2006) reviews the history of masculinity in food advertising. Parker explores how advertising in the 1920s and ’30s, even when geared towards women, focused on men as the authority, in need of being pleased and satiated with a meat central diet. Parkin’s analysis of marketing in the food industry continues by looking at how meat is portrayed as a masculine product. She notes that the idea of men cooking over an open fire, the man at the grill, are all images of masculinity that continue to exemplify, and typify, the connection between masculinity and meat.

Pop culture has done its fair share of promoting this stereotype as well. Meat advertising is dripping with imagery and messaging that reflects the stereotype of the masculine American meat-eater (Rogers, 2008). A slew of other fast-food chains and popular brands offer examples that promote this cultural identity, perpetuating the norms through marketing (Brownlie & Hewer, 2007). Richard Rogers (2008) offers an analysis of a handful of advertisements for popular brands that highlight the idea that eating meat is intricately linked to masculinity. In a 2006 advertisement for Hummer, a man is seen purchasing tofu and vegetables in the grocery store, while the man behind him unloads a large amount of ribs and charcoal. A look is exchanged between them. The man who bought the tofu is then seen aggressively driving out of

the parking lot, into the Hummer car sales lot, and leaves, driving away in a brand new hummer while munching on a carrot. The tagline reads, “Restore the Balance,” (with “balance” changed in 2007 from its original wording: “manhood”). The message about masculinity is clear—without meat, masculinity standards are not met. To alleviate that discomfort of acting in an unmanly way, the tofu eating man must compensate with an objectively aggressive car to demonstrate his masculinity and restore the perceived “balance” that was initially disrupted by his purchase of tofu. Even though he goes through with his original food choice, the association between meat and masculinity is still very intentional, even when thinly veiled in an advertisement about cars. Carl’s Jr., or Hardees (for those on the East Coast of the U.S.), is well known for their burger advertisements, which frequently feature scantily clad women—designed with the male gaze in mind—devouring extra-large portions of meat with gusto. The association of men as consumers of meat (as much as of women) is in line with the messaging that continues to promote masculinity in a dominant and hegemonic light (Adams, 2015). Another example is a 2014 burger ad by Carl’s Jr, which features a shape-shifting character, Mystique, from the popular X-Men series. As she bites into a large, meaty burger, she shapeshifts into a muscled male figure. The tagline reads, “Man Up for 2x the Bacon”.

While these examples feel overtly they are paired with more subtle, and persistent messaging, too. The familiar tagline “Beef. It’s What’s for Dinner,” popularized by a beef marketing agency in the 1990s (Loy et.al, 2018), emerged with a new advertisement in 2017 that was reminiscent of traditional masculine norms. Images of men on horseback with cowboy hats, riding through herds of cows in picturesque farmland are peppered with a few updates to the 1990 version with mentions of preserving the integrity of the land (throwing a bone to sustainability?). The rest, the tone, and imagery are unchanged, iconic.

Changing Behaviors

The pervasive cultural ties between meat and masculinity are demonstrated and reinforced through media. Perpetuating the pervasiveness of these norms about eating meat makes it challenging to then motivate a change in that same behavior. Even though there is unbiased data that shows eating less meat, or adopting a vegetarian diet, is one of the best ways to reduce our carbon footprint and improve the environment (Hedenus, 2014), presenting information is not always enough to change behavior (Kahan, 2011). Human behavior does not always follow rational models; in fact, established information that conflicts with our values and beliefs is often rejected, refuted, or ignored (Kahan, 2011). So how then can reducing meat consumption be normalized and encouraged?

Trusted Sources

While the results of a research study showing the environmental impact of meat production might not be the tipping point that convinces someone to make a change in their behavior, the source of that information can make a difference in whether or not it's even accepted (Braman, Kahan & Grimmerman, 2005). Most people do not have the time, or expertise, to become experts on all of the topics that are important and relevant to their lives, so we rely on information from trusted sources to make decisions and form beliefs (Gastil, Braman, Kahan & Slovic, 2011). Trusted sources are individuals that are members of the ingroup and are accepted and respected by the groups they are a part of. These trusted sources are much more likely to be successful at effectively sharing new information with members of their ingroup.

Religious leaders, sports figures, celebrities, or even politicians could be considered trusted sources to some people. Trusted sources are aligned with the ingroup identity and play a role in defining what traits are acceptable or unacceptable (Braman, Kahan & Grimmelmann, 2005). For sports fans, athletes can be a trusted source. One study found that consumers had more favorable responses to brands that were endorsed by athletes, even viewing those brands as more trustworthy and credible (Na, Kunkel & Doyle, 2020). The influence of trusted sources can have both positive and negative effects on behavior.

Trusted sources offer more than just an opinion on the brands we buy, they can also influence how we view and participate in cultural norms. Dr. Peter Glick, Social Sciences Professor at Lawrence University and Senior Scientist with the Neuroleadership Institute developed the Masculinity Contest Culture Scale to better understand how stereotypical masculinity traits negatively impact culturally normative behaviors (harassment, risky health choices, etc) (Berdahl, Glick & Cooper, 2018). For example, when Donald Trump and Mike Pence repeatedly decided not to wear masks in public and political settings during a global pandemic, they signaled to many people that that behavior was acceptable and normal. Glick describes this as a kind of “show no weakness” norm of masculinity (Glick, 2020), a norm that was displayed (and then echoed) by an authority that many look to as a trusted source.

Framing

Whether it's athletes or police figures, trusted sources hold sway and influence. Even so, there are other factors that contribute to how people respond to information and suggestions of changing behavior. The **framing effect** describes how perception and decision making is impacted by the way that information is presented (Tversky & Kahneman, 1981). Framing

information in a particular way can influence how someone responds, for example, by highlighting a positive aspect to elicit a positive response, or vice versa, as is often seen in politics (Tversky & Kahneman, 1981). Presenting information in a way that is relatable to the lifestyle and norms of the people you are trying to reach is a framing strategy that is often used to sway opinion or target a specific audience (Chong & Druckman, 2007).

When companies or organizations brand themselves as being associated with certain ideas or social movements, they are framing their product to appeal to a certain market (Holt, 2016). Hummer, a brand of trucks and SUVs, brands themselves as a rugged, masculine vehicle. They highlight the speed, durability, size, and performance of the product, and are a cultural icon (Dooley, 2020). Much like meat, which is also framed in popular culture as masculine, the association has become so familiar, a masculine framing is almost expected (Rozin et.al, 2012).

Framing a meatless diet as a form of environmental activism won't strike a chord with people if environmental concerns are not a value of the intended audience; however, framing the option in a more relatable way could be more successful. A study by Graham and Abrahamse (2017) on how framing and values impacted the communication of environmental information on meat consumption found that the response to sharing information about the impact of eating meat varied depending on the values already held by participants of the study. Those who already expressed concern about environmental issues were more likely to say they would reduce meat consumption, but the framing of the information otherwise did not have an impact on people's intention to reduce meat consumption. The researchers conclude, "These findings indicate that people with different values and levels of environmental concern may respond differently to the same information" (2017).

The Evangelical Climate Scientist

Katharine Hayhoe is a Professor and climate scientist at Texas Tech University; she is also a self-described theological evangelical (Hayhoe, 2019). As an evangelical, Dr. Hayhoe is a trusted source in faith-based communities, and, given her credentials and expertise, she is also a trusted source in academic and climate science communities. Dr. Hayhoe points out that climate change has often been framed as an issue of belief, stating, “So this framing plays right into the narrative that scientists are a godless bunch who have teamed up with liberals” (2019).

According to the scale created by Six Americas of Global Warming, people who fall into the Dismissive category are more likely to be evangelical Christians, hold strong conservative political beliefs, and are less likely to accept anthropogenic climate change (Leiserowitz, et al., 2011). Being a trusted source in the evangelical community has provided Dr. Hayhoe an opportunity to share climate change information, and her ability to frame that information makes her message even more meaningful. For example, in a 2019 New York Time article she wrote, “In fact, if we truly believe we’ve been given responsibility for every living thing on this planet (including each other) as it says in Genesis 1, then it isn’t only a matter of caring about climate change: We should be at the front of the line demanding action” (Hayhoe, 2019).

Cultural cognition theory posits that people who share your values are more likely to be deemed trustworthy, especially on controversial or political topics such as climate change (Kahan, 2010). Researchers have found that amongst evangelicals, information that comes from Christian sources who share the same values and beliefs, could be central to communicating effectively about climate change (Wilkinson, 2010). A study by researchers Webb and Hayhoe examined the climate change beliefs of Christian evangelicals after being presented with educational climate change information (2017). The study participants, students from a Christian

evangelical college, were divided into three groups, each of which received either a live, recorded, or a shortened lecture given by Katharine Hayhoe. The study used questions from the Six Americas of Global Warming to assess changes in the participants' beliefs about climate change before and after the lecture from the notable Christian scientist. The lectures not only contained facts about the scientific consensus of climate change but also included Biblical text and familiar language that was indicative of the lecturer's shared background with the participants. The results of the study showed that all three groups demonstrated a "significant increase in pro-climate beliefs on all six measured questions", such as belief in climate change and its impacts, and how much of a priority it is to address climate change (Webb & Hayhoe, 2017). The researchers noted that further studies could determine how much of the resulting change in beliefs was due to the shared values of the lecturer and how much was the use of evangelical language and culture (Webb & Hayhoe, 2017). This example demonstrates how strategically framed messaging, and the source that delivers it can penetrate the cultural cognitions that often prevent changes in belief and behavior.

Meat-less Messaging

Framing allows information to be narrowed and tailored so that emphasis is placed on what is most relevant to the audience (Nisbet, 2009). The notion of eating less meat, with meat being so close in its ties to masculinity, must be framed in a way that does not threaten that masculine association. The evangelical students and climate change experiment also tells us how important the source of information is, especially when that information clashes or connects with a strong cultural identifier. For example, John Joseph, a musician, Ironman triathlete, and author of *Meat is for Pussies*, frames his message about a meat-free diet in a way that relates to

traditional values of masculinity. He specifically avoids associations with the feminine (like the word vegan) and frames the act of avoiding meat as masculine (e.g., brave, bold) and eating meat as the opposite (e.g., cowardly, weak). In an interview with Vice, Joseph says, "I have dudes in prison, fighters, hooligans going vegan ...this is a demographic that's never going to be reached by some of these other folks. But you're gonna get hung up on a word? Men are stubborn, so it makes sense that they need someone that talks their language. Eating meat doesn't make you brave; it makes you a coward. That's why I called my book *Meat Is for Pussies*. That's what's gonna get through to these guys" (2016). Joseph takes a page out of the handbook for meat advertising that plays on masculinity norms and uses those same strategies to frame his message about not eating meat. The relationship between meat and masculinity is well-established, and the resistance to diet change is in response to the threat of losing a masculine identity (Rothgerber, 2013). Rather than changing masculine norms that are already deeply ingrained in culture, Joseph reframes meat-free stereotypes so that they fit into the culture that already exists.

Joseph is not alone in his strategy (although his might be one of the more blatant examples). Other vegetarian and vegan cookbooks marketed to men include titles such as *Thug Kitchen*, and *Vegetables Unleashed*. Even meat substitution brands are strategically playing on masculine norms to fuel their messaging. Beyond Meat, a brand of plant-based meat alternatives released their "Beast Burger", which boasts a meaty flavor and realistic meat-like texture experience. Beyond Meat's burgers even bleed, a result of adding beet juice to further enhance the illusion of eating meat. Their advertisements feature famous actors and musicians like Kevin Hart and Snoop Dog, giving it a stamp of undeniable coolness. Beyond Meat's GoBeyond campaign evokes familiar cultural norms of masculinity, with a highlight on terms like "mission-oriented" and, "having the drive to achieve the unattainable". This strategy appears to

be working, in their U.S. market, Beyond Meat sales in the second quarter of 2020 rose 194.9%, and they've started selling their burgers in large retailers such as Walmart and Target. People don't want something new, they want something that makes change easier to swallow. A substitute that can "pass" as meat, that looks, smells, and tastes, like meat, is less of a direct jump away from meat, and more of a shift (Hoek, 2010). *Game Changers*, a 2018 documentary that looked at the benefits of a plant-based diet, featured basketball stars, UFC fighters, and even Arnold Schwarzenegger. Although this seems like a way of perpetuating cultural stereotypes of masculinity, it could also be an effective way to change dietary norms.

Where Has This Worked Before?

The norms of masculinity have been challenged and manipulated in other areas of modern American culture—which could foretell the possibilities for a meat-free movement. An example of this is the personal care product industry; lotions, moisturizers, specialized soaps, and other grooming products, often associated with feminine stereotypes, are now more accepted across the gender spectrum (Scheibling & Lafrance, 2019; Elsner, 2012). All it takes is look on the shelves at Target, or glance at the growth numbers for companies like Dr. Squatch, to see the trending growth in grooming products geared towards men (Elsner, 2012).

Men's personal care products are a growing industry. For example, in 2019 the industry saw a 7% growth in sales, and projections for future growth are positive (Tungate, 2008). Similar to meat- alternatives, there has been a notable trend in how these products are marketed. A study by Scheibling and Lafrance (2019) looked at how men's grooming products between 2011 and 2013 were gendered to appeal to a socially dominant form of traditional masculinity. A unique paradox emerged between grooming trends that conflicted with prevalent masculine norms (eg.

strong, active, authoritative, in control of emotions). The study noted a growing acceptance of men's personal care products, demonstrated by advertising in the popular magazine, *Esquire*. However, the representation of this movement was presented in a way that further buttressed the culture and expectations of traditional masculine norms. The study noted, "although men have been given greater freedom in how they choose to embody masculinity, they are also being met with more pervasive—and oftentimes contradictory—pressures concerning gender performances, consumerism, and bodywork" (p.225).

Much like meat substitutes, the advertising of these products often features less-than-subtle references to masculine norms. For example, War Paint, a makeup company for men, is challenging the notion that makeup is only for female-identifying people. Their advertising focuses heavily on portraying a masculine image, with glowering muscled and tattooed men smearing concealer under their eyes like, well, war paint. Another example is a soap-for-men company, Dr. Squatch. On their website, you can take a quick quiz to find out your perfect product scent; the very first question appears with a gif of actor Dwayne Johnson "The Rock", who is reassuringly masculine. In his book, *Branded Male, Marketing to Men*, Mark Tungate (2008) writes, "Today's men are far more likely to adopt a regular grooming routine consisting of shave, shower, deodorize, hair styling and fragrance than ever before" (p.14), but he also points out the struggle to find the language and messaging that will encourage men to explore new personal care routines. This process towards the acceptance of a new trend is continuing to evolve. An interesting example is seen in the advertisement for Dr. Squatch soap. The use of gimmicky (but intentionally comical) clips of men chopping wood and proclaiming the sex appeal of those who use Pine Tar soap also finds a way to promote the sustainability of their product. The pairing of men's grooming with sustainable consumption habits could signal a

changing social norm, although one still promoting the same masculine archetype (Scheibling & Lafrance, 2019).

Examining other popular brands of men's grooming products presents a similar trend of social commentary, but some advertisements have taken a different approach. Gillette shifted direction away from emphasizing a product as traditionally masculine, to an approach that questioned those norms. Instead of glorifying traditional masculinity, Gillette focused on responding to the social awareness of toxic masculinity in their 2019 campaign, *The Best Men Can Be* (McBee, 2019), (Gillette, 2019). Axe Body Spray, with its history of sexist commercials (Nudd, 2016), also pivoted in 2017 with its campaign—"Is It OK For Guys" which highlights a much wider range of masculine identities and asks questions of viewers, "Is it OK to be emotional? Wear makeup? Not like sports?" (Axe, 2017). The persistent images of masculine norms are still dominant in marketing for personal care products (Alexander, 2003), but the shifts in the industry are also evident. A movement towards gender-neutral products has emerged in popular brands such as *The Ordinary* (Murtell, 2019), further indicating the evolving trends that make personal care products a more accepted part of culture. While the days of the 3-in-1 shampoo/bodywash/conditioner might not be entirely behind us, the trends in men's personal care products are an example of an industry that has emerged successfully amidst the cultural stereotypes of masculinity (Arnett, 2019). Whether that is indicative of a change in social norms, or a strategic method of marketing, is a question to be answered by further research.

Could this be the same trend for meat-free dietary changes? The rise—and predicted growth—in the meat-alternative industry (Barclay, 2019) indicates that preferences for meat alternatives are growing. Those numbers, however, do not tell how (or if) the values of

traditional masculinity and meat consumption are altered. Similar to personal care products, the message that rejecting meat is not a rejection of social norms is a way to maintain an identity without significantly changing values (Greenebaum, & Dexter, 2018). Eating habits are a performance of social norms, and meat alternatives that offer to maintain those norms are a gateway to dietary change (De Backer, 2020). Offering an option that appeals to culturally dominant masculinity appears to be a potential way to reduce meat consumption.

Conclusion

Meat production's negative impact on climate change, water, biodiversity loss, GHGs, and deforestation demands a shift towards a future of less meat consumption (Wellesley, Happer & Froggatt, 2015). The culturally dominant norms of masculinity, which place value on meat as a part of a masculine identity, create a challenge to changing meat-eating behavior. It is apparent that without change, meat consumption will continue to be a contributing factor to enduring environmental degradation (Shukla, et al, 2019). Although the concept of cultural cognition in eating meat can help explain why certain people are so resistant to changing their diet in spite of evidence, it does not offer a clear-cut strategy for successfully changing behavior.

When examining the ways in which our minds interpret information and make decisions, there are several cognitive processes that either help or hinder the push towards change. Biases and heuristics influence our ability to recognize and process information. These mental shortcuts can lead to irrational decisions, especially when our values and beliefs conflict with the information presented. Biases and heuristics, however, do offer enough explanation for some men's resistance to eating less meat. Instead another model, socially constructed masculinity, reinforced, and affirmed by tradition and American culture, provides a narrow framework for the

values and beliefs that are acceptable for those who identify with this version of masculinity. The more strongly held a person's beliefs are about socially dominant masculine norms, the stronger the likelihood that they will reject conflicting information. Research has demonstrated that male-identified people tend to behave in line with the social norms of other members of their ingroup.

Telling someone who adheres to these values to stop eating meat because of its environmental impact is asking them to reject a cultural expression of themselves and the ingroup they belong to. Not eating meat would signal a rejection of the norms of masculinity, perhaps even hint at femininity. Nonetheless, these norms have been challenged and manipulated in other areas of modern American culture. The personal care product industry - lotions, moisturizers, specialized soaps, and other grooming products often associated with feminine stereotypes - are now more accepted across the gender spectrum. The growing approval of personal care products into the masculine norm is an example of how meat-reduction could also become acceptable behavior. To make going meat-free a non-threatening behavior, the act of reducing meat consumption might be framed in line with masculine values and signaled as accepted behavior by trusted sources. However, relying on gender stereotypes to move away from meat continues to perpetuate a set of behaviors and ideals that are ultimately not in alignment with sustainable values. It is not a long term solution. The shifting trends in the personal care product industry have tended towards both hyper masculine marketing and, alternatively, a shift towards questioning/challenging masculine norms. Perhaps a meat-less trend will progress in a similar manner, finding ways to deemphasize hegemonic masculinity, shifting both values and behavior.

References

- Adams, C. J. (2015). *The sexual politics of meat: A feminist-vegetarian critical theory*. Bloomsbury Publishing USA.
- Alexander, S. M. (2003). *Stylish hard bodies: Branded masculinity in Men's Health magazine*. *Sociological perspectives*, 46(4), 535-554.
- American Psychological Association [@APA]. (Jan. 7, 2019). *Traits of so-called 'traditional masculinity,' like suppressing emotions & masking distress, often start early in life & have been linked to less willingness by boys & men to seek help, more risk-taking & aggression — possibly harming themselves & those with whom they interact* [Tweet] Twitter. twitter.com/apa/status/1082401926782861316?lang=en.
- American Psychological Association. (2018). APA guidelines for psychological practice with boys and men. *APA guidelines for psychological practice with boys and men*.
- Arnett, G. (2019, August 26). The future of male grooming is gender neutral. *Vouge Business*.
- Axe. (2017, March 16). *Is it ok for guys...* [Video]. YouTube. <https://youtu.be/0WySfa7x5q0>
- Barclay Equity Research. (2019). I can't believe it's not meat. *Barclays Research*. https://eu30.salesforce.com/sfc/p/#1t000000wCuV/a/1t000000Xg33/q3Bm_z_oilM8K7s4mnGLApU.WpmqvU6rEsBaiqGRob4
- Baum, J., & Westheimer, K. (2015). Sex? Sexual Orientation? Gender Identity? Gender Expression?. *Teaching Tolerance*, 50.
- Bashir, N. Y., Lockwood, P., Chasteen, A. L., Nadolny, D., & Noyes, I. (2013). The ironic impact of activists: Negative stereotypes reduce social change influence. *European Journal of Social Psychology*, 43(7), 614-626.
- Berdahl, J. L., Glick, P., & Cooper, M. (2018). How masculinity contests undermine organisations, and what to do about it. *Harv Bus Review*.
- Bloodhart, B., & Swim, J. K. (2020). Sustainability and consumption: What's gender got to do with it?. *Journal of Social Issues*, 76(1), 101-113.
- Bolen, B. (2016, September 16). Why Men Are Afraid of Going Vegan. *Vice Magazine*.

- Braman, D., Kahan, D. M., & Grimmelmann, J. (2005). Modeling facts, culture, and cognition in the gun debate. *Social Justice Research, 18*(3), 283-304.
- Brough, A. R., Wilkie, J. E., Ma, J., Isaac, M. S., & Gal, D. (2016). Is eco-friendly unmanly? The green-feminine stereotype and its effect on sustainable consumption. *Journal of Consumer Research, 43*(4), 567-582.
- Brownlie, D., & Hewer, P. (2007). Prime beef cuts: Culinary images for thinking 'men'. *Consumption, Markets and Culture, 10*(3), 229-250.
- Buck, D. M., Plant, E. A., Ratcliff, J., Zielaskowski, K., & Boerner, P. (2013). Concern over the misidentification of sexual orientation: Social contagion and the avoidance of sexual minorities. *Journal of Personality and Social Psychology, 105*(6), 941.
- Chuang, F., Manley, E., & Petersen, A. (2020). The role of worldviews in the governance of sustainable mobility. *Proceedings of the National Academy of Sciences, 117*(8), 4034-4042.
- Chong, D., & Druckman, J. N. (2007). Framing theory. *Annu. Rev. Polit. Sci., 10*, 103-126.
- Cohen, G. L., Aronson, J., & Steele, C. M. (2000). When beliefs yield to evidence: Reducing biased evaluation by affirming the self. *Personality and social psychology bulletin, 26*(9), 1151-1164.
- Connell, R. W., & Messerschmidt, J. W. (2005). Hegemonic masculinity: Rethinking the concept. *Gender & society, 19*(6), 829-859.
- Cook, M. (1998). Reducing water pollution from animal feeding operations. Testimony before Subcommittee on Forestry. *Resource Conservation, and Research of the Committee on Agriculture, US House of Representatives, 13*(05).
- Courtenay, W. H. (2000). Constructions of masculinity and their influence on men's well-being: a theory of gender and health. *Social science & medicine, 50*(10), 1385-1401.
- Delgado, C. L. (2003). Rising consumption of meat and milk in developing countries has created a new food revolution. *The Journal of nutrition, 133*(11), 3907S-3910S.
- Dooley, Roger. "GM Nails Hummer Branding." Forbes, 21 Oct. 2020, www.forbes.com/sites/rogerdooley/2020/10/21/gm-nails-hummer-branding/#57bd7bab4744.

- Douglas, P. M., & Douglas, M. (1994). Risk and blame : Essays in cultural theory. ProQuest Ebook Central <https://ebookcentral.proquest.com>
- Dowsett, E., Semmler, C., Bray, H., Ankeny, R. A., & Chur-Hansen, A. (2018). Neutralising the meat paradox: Cognitive dissonance, gender, and eating animals. *Appetite*, 123, 280-288.
- Eagly, A. H., Wood, W., & Diekmann, A. B. (2000). Social role theory of sex differences and similarities: A current appraisal. *The developmental social psychology of gender*, 12, 174.
- Ehrlinger, J., Gilovich, T., & Ross, L. (2005). Peering into the bias blind spot: People's assessments of bias in themselves and others. *Personality and Social Psychology Bulletin*, 31(5), 680-692.
- Elsner, P. (2012). Overview and trends in male grooming. *British Journal of Dermatology*, 166, 2-5.
- Emslie, C., Ridge, D., Ziebland, S., & Hunt, K. (2006). Men's accounts of depression: reconstructing or resisting hegemonic masculinity?. *Social science & medicine*, 62(9), 2246-2257.
- Festinger, L. (1957). *A theory of cognitive dissonance* (Vol. 2). Stanford university press.
- Gastil, J., Braman, D., Kahan, D., & Slovic, P. (2011). The cultural orientation of mass political opinion. *PS: Political Science & Politics*, 44(4), 711-714.
- Geiger, N., & Swim, J. K. (2018). Gendered impressions of issue publics as predictors of climate activism. *Frontiers in Communication*, 3, 54.
- Geist, H. J., & Lambin, E. F. (2002). Proximate Causes and Underlying Driving Forces of Tropical Deforestation Tropical forests are disappearing as the result of many pressures, both local and regional, acting in various combinations in different geographical locations. *BioScience*, 52(2), 143-150.
- Gerber, P. J., Steinfeld, H., Henderson, B., Mottet, A., Opio, C., Dijkman, J., ... & Tempio, G. (2013). *Tackling climate change through livestock: a global assessment of emissions and mitigation opportunities*. Food and Agriculture Organization of the United Nations (FAO).
- Gibbons, A. (2014). The evolution of diet. *National Geographic*, 226(3), 30-61.

- Gigerenzer, G. (2015). On the supposed evidence for libertarian paternalism. *Review of philosophy and psychology*, 6(3), 361-383.
- Gigerenzer, G. (2008). Why heuristics work. *Perspectives on psychological science*, 3(1), 20-29.
- Gillette. (2019, January 19). *We believe: the best men can be | Gillette* [Video]. YouTube. <https://youtu.be/koPmuEyP3a0>
- Gilpin, C. C., & Proulx, N. (2018). Boys to Men: Teaching and Learning About Masculinity in an Age of Change. *The New York Times*.
- Glick, P. (2020). Masks and emasculation: Why some men refuse to take safety precautions. *Scientific American*, 30.
- Gossard, M. H., & York, R. (2003). Social structural influences on meat consumption. *Human Ecology Review*, 1-9.
- Graham, T., & Abrahamse, W. (2017). Communicating the climate impacts of meat consumption: The effect of values and message framing. *Global Environmental Change*, 44, 98-108.
- Greenebaum, J., & Dexter, B. (2018). Vegan men and hybrid masculinity. *Journal of Gender Studies*, 27(6), 637-648.
- Hammerschlag, K., & Venkat, K. (2011). Meat-eater's guide to climate change and health: lifecycle assessments—methodology and results. *Washington, DC, USA: Environmental Working Group*.
- Harmon-Jones, E. E. (2019). *Cognitive dissonance: Reexamining a pivotal theory in psychology* (pp. xvi-303). American Psychological Association.
- Harmon-Jones, E., Harmon-Jones, C., & Levy, N. (2015). An action-based model of cognitive-dissonance processes. *Current Directions in Psychological Science*, 24(3), 184-189.
- Hayhoe, K. (2019). *I'm a climate scientist who believes in god. hear me out*. New York: New York Times Company.

- Hedenus, F., Wirsenius, S., & Johansson, D. J. (2014). The importance of reduced meat and dairy consumption for meeting stringent climate change targets. *Climatic change*, 124(1-2), 79-91.
- Heinz, B., & Lee, R. (1998). Getting down to the meat: The symbolic construction of meat consumption. *Communication Studies*, 49(1), 86-99. Retrieved from <http://0-search.proquest.com.wncln.wncln.org/docview/233196675?accountid=8388>
- Heller, M. C., & Keoleian, G. A. (2014, October). Greenhouse gas emissions of the US diet: aligning nutritional recommendations with environmental concerns. In *Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector* (pp. 9-10).
- Herzog, H. (2010). *Some we love, some we hate, some we eat: Why it's so hard to think straight about animals*. New York, NY: Harper Collins.
- Hoek, A. C. (2010). Will novel protein foods beat meat?: consumer acceptance of meat substitutes-a multidisciplinary research approach.
- Hockstad, L., & Hanel, L. (2018). *Inventory of US greenhouse gas emissions and sinks* (No. cdiac: EPA-EMISSIONS). Environmental System Science Data Infrastructure for a Virtual Ecosystem.
- Holt, D. (2016). Branding in the age of social media. *Harvard Business Review*, 94(3), 40-50.
- Horrigan, L., Lawrence, R. S., & Walker, P. (2002). How sustainable agriculture can address the environmental and human health harms of industrial agriculture. *Environmental health perspectives*, 110(5), 445-456.
- Hrynowski, Z. (2019, September 27). What Percentage of Americans Are Vegetarian? *Gallup*. <https://news.gallup.com/poll/267074/percentage-americans-vegetarian.aspx>
- Kahan, D. M., & Braman, D. (2006). Cultural cognition and public policy. *Yale Law & Policy Review*, 24(1), 149-172.
- Kahan, D. M., Braman, D., Cohen, G. L., Gastil, J., & Slovic, P. (2010). Who fears the HPV vaccine, who doesn't, and why? An experimental study of the mechanisms of cultural cognition. *Law and human behavior*, 34(6), 501-516.

- Kahan, D. M., Braman, D., Gastil, J., Slovic, P., & Mertz, C. K. (2007). Culture and identity-protective cognition: Explaining the white-male effect in risk perception. *Journal of Empirical Legal Studies*, 4(3), 465-505.
- Kahan, D. M., Jenkins-Smith, H., & Braman, D. (2011). Cultural cognition of scientific consensus. *Journal of risk research*, 14(2), 147-174.
- Kahan, D. M., Peters, E., Wittlin, M., Slovic, P., Ouellette, L. L., Braman, D., & Mandel, G. (2012). The polarizing impact of science literacy and numeracy on perceived climate change risks. *Nature climate change*, 2(10), 732-735.
- Kahneman, D. (2003). A perspective on judgment and choice: mapping bounded rationality. *American psychologist*, 58(9), 697.
- Kahneman, D. (2003). Maps of bounded rationality: *Psychology for behavioral economics*. *American economic review*, 93(5), 1449-1475.
- Kahneman, D. (2011). *Thinking, fast and slow*. Macmillan.
- Keeble, B. R. (1988). The Brundtland report: 'Our common future'. *Medicine and war*, 4(1), 17-25.
- Leiserowitz, A., Maibach, E., Roser-Renouf, C., & Smith, N. (2011). Global warming's six Americas, May 2011. *Yale University and George Mason University*.
- Levant, R. F., & Richmond, K. (2008). A review of research on masculinity ideologies using the Male Role Norms Inventory. *The Journal of Men's Studies*, 15(2), 130-146.
- Lord, C. G., Ross, L., & Lepper, M. R. (1979). Biased assimilation and attitude polarization: The effects of prior theories on subsequently considered evidence. *Journal of personality and social psychology*, 37(11), 2098.
- Loughnan, S., Bastian, B., & Haslam, N. (2014). The psychology of eating animals. *Current Directions in Psychological Science*, 23(2), 104-108.
- Loy, D. D., Doran, B. E., Euken, R. M., Schwab, D. L., Clark, C. A., Sellers, J., & Schulz, L. L. (2018). Iowa Beef Center. *Animal Industry Report*, 664(1).
- Madsen, J. K., Madsen, J. K., & Farrow. (2019). *The Psychology of Micro-Targeted Election Campaigns*. Springer International Publishing.

- Mahalik, J. R., Burns, S. M., & Syzdek, M. (2007). Masculinity and perceived normative health behaviors as predictors of men's health behaviors. *Social science & medicine*, 64(11), 2201-2209.
- Malka, A., Krosnick, J. A., & Langer, G. (2009). The association of knowledge with concern about global warming: Trusted information sources shape public thinking. *Risk Analysis: An International Journal*, 29(5), 633-647.
- Markowski, K. L., & Roxburgh, S. (2019). "If I became a vegan, my family and friends would hate me:" Anticipating vegan stigma as a barrier to plant-based diets. *Appetite*, 135, 1-9.
- Matz, D. C., & Wood, W. (2005). Cognitive dissonance in groups: The consequences of disagreement. *Journal of personality and social psychology*, 88(1), 22.
- McBee, T. (2019, January 22). Toxic masculinity is under attack. That's fine. New guidelines for therapists who treat men, the Gillette ad, and backlash. *Vox*.
<https://www.vox.com/first-person/2019/1/22/18188776/toxic-masculinity-gillette-ad-apa-guidelines>
- Moore, H. (1994). Understanding sex and gender. *Companion encyclopedia of anthropology*, 813-830.
- Murtell, J. (2019, September 12). The Rise of Gender-Neutral Branding. *Packing Strategies*.
<https://www.packagingstrategies.com/articles/95077-the-rise-of-gender-neutral-branding>
- Na, S., Kunkel, T., & Doyle, J. (2020). Exploring athlete brand image development on social media: The role of signalling through source credibility. *European Sport Management Quarterly*, 20(1), 88-108.
- Nath, J. (2011). Gendered fare? A qualitative investigation of alternative food and masculinities. *Journal of Sociology*, 47(3), 261-278.
- Nam, H. H., Jost, J. T., & Van Bavel, J. J. (2013). "Not for all the tea in China!" Political ideology and the avoidance of dissonance-arousing situations. *PloS one*, 8(4), e59837.
- Newcombe, M. A., McCarthy, M. B., Cronin, J. M., & McCarthy, S. N. (2012). "Eat like a man". A social constructionist analysis of the role of food in men's lives. *Appetite*, 59(2), 391-398.

- Nisbet, M. C. (2009). Framing science: A new paradigm in public engagement. *Understanding science: New agendas in science communication*, 40, 67.
- Nisbett, R. E., & Ross, L. (1980). Human inference: Strategies and shortcomings of social judgment.
- Nudd, T. (2016, January 14). Ad of the Day: Axe gets inclusive in a remarkable ad that's really pretty magical. Brand tries a more grown-up take on masculinity. *Adweek*.
<https://www.adweek.com/brand-marketing/ad-day-axe-gets-inclusive-remarkable-ad-that-s-really-pretty-magical-168996/>
- Office of Disease Prevention and Health Promotion. (2015). Chapter 2 Shifts Needed To Align With Healthy Eating Patterns.
- Onwezen, M. C., & van der Weele, C. N. (2016). When indifference is ambivalence: Strategic ignorance about meat consumption. *Food Quality and Preference*, 52, 96-105.
- Parkin, K. J. (2006). *Food is love: Food advertising and gender roles in modern America*. University of Pennsylvania Press.
- Trusts, P. C., & Hopkins, J. (2008). Putting meat on the table: Industrial farm animal production in America. *A Report of the Pew commission on industrial Farm Animal Production*.
- Pimentel, D., Houser, J., Preiss, E., White, O., Fang, H., Mesnick, L., & Alpert, S. (1997). Water resources: agriculture, the environment, and society. *BioScience*, 47(2), 97-106.
- Plous, S. (1993). *The psychology of judgment and decision making*. McGraw-Hill Book Company.
- P.R. Shukla, J. Skea, R. Slade, R. van Diemen, E. Haughey, J. Malley, M. Pathak, J. Portugal Pereira (eds.) Technical Summary, 2019. In: Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.-O. Pörtner, D. C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)]. In press.

- Reigeluth, C. S., & Addis, M. E. (2016). Adolescent boys' experiences with policing of masculinity: Forms, functions, and consequences. *Psychology of Men & Masculinity*, 17(1), 74.
- Risen, J., Gilovich, T., Sternberg, R. J., Halpern, D., & Roediger, H. (2007). Informal logical fallacies. *Critical thinking in psychology*, 110.
- Robbins, J. M., & Krueger, J. I. (2005). Social projection to ingroups and outgroups: A review and meta-analysis. *Personality and social psychology review*, 9(1), 32-47.
- Rogers, C. R. (1959). *A theory of therapy, personality, and interpersonal relationships: As developed in the client-centered framework* (Vol. 3, pp. 184-256). New York: McGraw-Hill.
- Rogers, R. A. (2008). Beasts, burgers, and hummers: Meat and the crisis of masculinity in contemporary television advertisements. *Environmental Communication*, 2(3), 281-301.
- Rothgerber, H. (2013). Real men don't eat (vegetable) quiche: Masculinity and the justification of meat consumption. *Psychology of Men & Masculinity*, 14(4), 363.
- Rozin, P., Hormes, J. M., Faith, M. S., & Wansink, B. (2012). Is meat male? A quantitative multimethod framework to establish metaphoric relationships. *Journal of Consumer Research*, 39(3), 629-643.
- Ruby, M. B., & Heine, S. J. (2011). Meat, morals, and masculinity. *Appetite*, 56(2), 447-450.
- Scheibling, C., & Lafrance, M. (2019). Man Up but Stay Smooth: Hybrid Masculinities in Advertising for Men's Grooming Products. *The Journal of Men's Studies*, 27(2), 222-239.
- Schimmel, J., Arndt, J., Pyszczynski, T., & Greenberg, J. (2001). Being accepted for who we are: evidence that social validation of the intrinsic self reduces general defensiveness. *Journal of personality and social psychology*, 80(1), 35.
- Sherman, D. K., & Cohen, G. L. (2002). Accepting threatening information: Self-Affirmation and the reduction of defensive biases. *Current Directions in Psychological Science*, 11(4), 119-123.
- Shleifer, A. (2012). Psychologists at the gate: a review of Daniel Kahneman's thinking, fast and slow. *Journal of Economic Literature*, 50(4), 1080-91.

- Steinfeld, H., Gerber, P., Wassenaar, T. D., Castel, V., Rosales, M., Rosales, M., & de Haan, C. (2006). *Livestock's long shadow: environmental issues and options*. Food & Agriculture Org..
- Sobal, J. (2005). Men, meat, and marriage: Models of masculinity. *Food and foodways*, 13(1-2), 135-158.
- Song, W., Huang, M., Rumbelha, W., & Li, H. (2007). Determination of amprolium, carbadox, monensin, and tylosin in surface water by liquid chromatography/tandem mass spectrometry. *Rapid Communications in Mass Spectrometry: An International Journal Devoted to the Rapid Dissemination of Up-to-the-Minute Research in Mass Spectrometry*, 21(12), 1944-1950.
- Springer, K. W., & Mouzon, D. M. (2011). "Macho men" and preventive health care: Implications for older men in different social classes. *Journal of Health and Social Behavior*, 52(2), 212-227.
- Stibbe, A. (2004). Health and the social construction of masculinity in Men's Health magazine. *Men and Masculinities*, 7(1), 31-51.
- Stoll-Kleemann, S., & Schmidt, U. Johanna. (2017). Reducing meat consumption in developed and transition countries to counter climate change and biodiversity loss: a review of influence factors. *Regional environmental change*, 17, 1261-1277. doi: [10.1007/s10113-016-1057-5](https://doi.org/10.1007/s10113-016-1057-5)
- Swim, J. K., & Geiger, N. (2018). The gendered nature of stereotypes about climate change opinion groups. *Group Processes & Intergroup Relations*, 21(3), 438-456.
- Swim, J. K., Gillis, A. J., & Hamaty, K. J. (2020). Gender bending and gender conformity: the social consequences of engaging in feminine and masculine pro-environmental behaviors. *Sex Roles*, 82(5-6), 363-385.
- Tajfel, H., & Turner, J. (1979). An integrative theory of intergroup conflict. in wg austin & s. worchel (eds.), *The social psychology of intergroup relations* (pp. 33-47). *Monterey, CA: Brooks/Cole*.
- Thompson, M., Ellis, R., & Wildavsky, A. B. (1990). *Cultural theory*. Boulder, Colo: Westview Press.

- Trusts, P. C., & Hopkins, J. (2008). Putting meat on the table: Industrial farm animal production in America. *A Report of the Pew commission on industrial Farm Animal Production*.
- Tolstoy, L. (1899). What is art?(Aylmer Maude, Trans.).
- Tungate, M. (2008). *Branded male: marketing to men*. Kogan Page Publishers.
- Tversky, A., & Kahneman, D. (1973). Availability: A heuristic for judging frequency and probability. *Cognitive psychology*, 5(2), 207-232.
- Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *science*, 185(4157), 1124-1131.
- Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *science*, 211(4481), 453-458.
- U.S. Department of Agriculture Economic Research Service. August 4, 2020. Meat Animals Production, Disposition, and Income Annual Summary.
<https://www.ers.usda.gov/topics/animal-products/cattle-beef/#periodic>
- Vandello, J. A., & Bosson, J. K. (2013). Hard won and easily lost: A review and synthesis of theory and research on precarious manhood. *Psychology of Men & Masculinity*, 14(2), 101.
- VandenBos, G. R. (2007). *APA dictionary of psychology*. American Psychological Association.
- Walker, Polly, Pamela Rhubart-Berg, Shawn McKenzie, Kristin Kelling, and Robert S. Lawrence. "Public health implications of meat production and consumption." *Public health nutrition* 8, no. 4 (2005): 348-356.
- Webb, B. S., & Hayhoe, D. (2017). Assessing the influence of an educational presentation on climate change beliefs at an Evangelical Christian College. *Journal of Geoscience Education*, 65(3), 272-282.
- Wellesley, L., Happer, C., & Froggatt, A. (2015). Chatham House Report: Changing Climate, Changing Diets: Pathways to Lower Meat Consumption.
- Wilkinson, K. K. (2010). Climate's Salvation?. *Environment*, 52(2), 47.

- Willer, R., Rogalin, C. L., Conlon, B., & Wojnowicz, M. T. (2013). Overdoing gender: A test of the masculine overcompensation thesis. *American journal of sociology*, 118(4), 980-1022.
- Worth, B. (2017). *Summary and Analysis of Thinking, Fast and Slow: Based on the Book by Daniel Kahneman*. Open Road Media.
- Yousaf, O., Popat, A., & Hunter, M. S. (2015). An investigation of masculinity attitudes, gender, and attitudes toward psychological help-seeking. *Psychology of Men & Masculinity*, 16(2), 234.
- Zelezny, L. C., Chua, P. P., & Aldrich, C. (2000). New ways of thinking about environmentalism: Elaborating on gender differences in environmentalism. *Journal of Social Issues*, 56(3), 443-457.